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10/752,624	01/07/2004	Mukund Raghavachari	YOR920030201US1	5975
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MICHAEL J. BUCHENHORN 8540 S.W. 83 STREET MIAMI, FL 33143			EXAMINER LIE, ANGELA M	
			ART UNIT	PAPER NUMBER
			2163	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/752,624	Applicant(s) RAGHAVACHARI, MUKUND	
	Examiner ANGELA M. LIE	Art Unit 2163	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,7-13,15,16 and 18-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7-13,15,16 and 18-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of claims

1. Claims 1, 2, 4, 5, 7-13, 15, 16 and 18-21 are currently pending. Claims 3, 6, 14 and 17 are canceled.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: in particular the "computer executable medium" is not defined in the specification, thus one of ordinary skill in the art at the time the invention was made could not exclusively decide that computer executable medium include only tangible media such as physical memory.

35 USC § 101

3. The phrase "computer executable medium" was interpreted by the examiner as tangible media such as physical memory, therefore claim 21 in view of this interpretation is presumed statutory. Hence claim 21 complies with 35 U.S.C. 101 requirements.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application

by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. **Claims 1, 2, 4, 5,8-13, 15, 16, 19-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Calahan (US Publication No. 2007/0156750).**

As to claims 1, 11 and 21, Calahan discloses a method for processing an XML document, wherein the XML document comprises a tree structure comprising branches comprising a plurality of nodes (Figure 2), the method comprising steps of: receiving a query comprising an XPath expression (paragraphs [0005] and [0012]), the query comprising search criteria and wherein the search criteria comprise a set of constraints that specify forward or backward relations between nodes (paragraph [0015]); receiving a context node from the XML document with respect to which the search criteria are applied; receiving at least a portion of the XML document (paragraph [0015], wherein the content of the node corresponds to a portion of an XML file, and further wherein traversal of the tree results in “node set containing nodes being selected by the location path”); modifying the search criteria to introduce a constraint matching the context node into the set of constraints (paragraph [0015], wherein location path (Xpath) can be further used to filter out the node set, i.e. new constraints eliminate nodes that do not

match, thus the set comprise the desired node complying with the constraints); processing the at least a portion of the XML document in a streaming manner (paragraph [0018], element 102) and using the modified search criteria in a single depth-first traversal of the at least a portion of the XML document (paragraph [0018], wherein the XML inputted tree could be the node set obtained in paragraph [0015] based on the modified search criteria (i.e. expression used to filter)), and wherein further the tree can be traversed based on depth-first search); and locating one or more nodes that satisfy the modified search criteria (paragraph [0018], element 308, i.e. outputting the stream).

As to claims 2 and 13, Calahan discloses the method wherein the XML document is stored in memory (paragraphs [0012] and [0013], wherein both options teach storing at least part of an XML document in a memory).

As to claims 4 and 15, Calahan discloses the method wherein the XML document is a streaming document (Figure 1, elements 100 and 102).

As to claims 5, 12 and 16, Calahan discloses the method wherein the modifying step further comprises modifying the search criteria such that constraints specifying a backward relation may be reformulated into forward constraints (paragraph [0013], wherein schema of document is utilized in order to assure only forward traversal).

As to claims 8 and 19, Calahan discloses the method further comprising reordering the tree structure representing the XML document to be searched such that the number of nodes traversed is minimized (paragraph [0015], wherein creating node set reduces the number of nodes that need to be traversed).

As to claims 9 and 20, Calahan discloses the method further comprising reordering the tree structure representing the XML document to be searched such that context node is traversed as early as possible (paragraph [0015], wherein the generated node set contains context node and other nodes which are selected relative to the context node).

As to claim 10, Calahan discloses the method further comprising reordering the tree structure representing the XML document to be searched such that the context node appears in the path of the tree that is traversed first (paragraph [0015], wherein the set of nodes includes the context node, therefore once the set is searched the context node would appear along the path).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 7 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Calahan in the view of Trappen et al (US Publication 20050138064), hereafter referred to as Trappen.** Calahan teaches the limitations disclosed in claims 1 and 11, however he does not teach that query can be represented by a modified directed acyclic graph comprising a node "Ctxt" which only matches the context node. Trappen teaches

the system for manipulating database wherein a query is represented by DAG (directed acyclic graph), and wherein the query is matched with the searched document or file (paragraph [0161]). It would have been obvious to one of the ordinary skill in the art at the time the invention was made to utilize DAG to represent the query because this allows for much faster search than the traditional text (serial) query since "a directed acyclic graph is a graph in which there are no paths to follow that allow the same node to be visited twice. By building a DAG containing the objects being joined, and their joins to each other, the graph can be traversed in order to produce the correct joins in the correct order in relation to one another" (Trappen, paragraph [0120]).

Response to Arguments

9. Applicant's arguments with respect to claims 1, 2, 4, 5, 8-13, 15, 16 and 19-21 have been considered but are moot in view of the new grounds of rejection.

10. With respect to the Applicant's assertion on page 9, pertaining to claims 7 and 18, stating that applicant's X-DAG query is a "far cry" from Trappen's conventional use of the DAG to represent only forward constraints, the examiner disagrees. Both database as well as the XML document are structured data sets (wherein both of them could be represented by tree), therefore a person of an ordinary skill in the art at the time the invention was made would recognize that modified DAG query utilized in a database taught by Trappen, would be also an obvious choice for searching an XML document. Furthermore, the examiner would like to note that claims 7 and 18 lack any information about the X-DAG query as to clearly differentiate it from DAG query used by

Trappen. Consequently, the examiner maintains that Trappen's teaching is a proper secondary prior art, hence the combination of the newly introduced Calahan's teaching and Trappen's art cover all the limitations currently disclosed in claims 7 and 18.

Inquiry

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANGELA M. LIE whose telephone number is (571)272-8445. The examiner can normally be reached on M-F.

12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hung T Vy/
Primary Examiner, Art Unit 2163

/Angela M Lie/
Examiner, Art Unit 2163

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